

CLAIMS

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2 We claim:

3 1. A process for digesting woodchips used in papermaking comprising:

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5 adding an effective digesting amount of a digesting additive comprising
6 a sultaine to a slurry of woodchips and white liquor.

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8 2. The process of claim 1 wherein the digester additive further comprises a
9 nonionic surfactant, selected from the group consisting of (a) polyglycosides, (b)
10 polyoxyalkylene glycols, and (c) mixtures thereof.

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12 3. The process of claim 1 wherein the amount of digesting additive is from about
13 0.05% to 1.00% based upon the weight of the woodchips digested.

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15 4. The process of claim 3 wherein the weight ratio of sultaine to nonionic
16 surfactant is from about 10:90 to 90:10.

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18 5. The process of claim 4 wherein the wherein the nonionic surfactant is a
19 polyglycoside and the polyglycoside is an alkyl alkoxy polyglycoside having the
20 following structural formula:



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24 where R_1 is selected from the group consisting of alkyl, alkylphenyl,
25 hydroxyalkyl, hydroxyalkylphenyl, and mixtures thereof in which the alkyl
26 groups contain from about 6 to about 30; and x is from about 1.0 to about 10;
27 and glycosyl is a monosaccharide unit.

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29 6. The process of claim 4 wherein the nonionic surfactant is a polyoxyalkylene
30 glycol having the following structural formula:



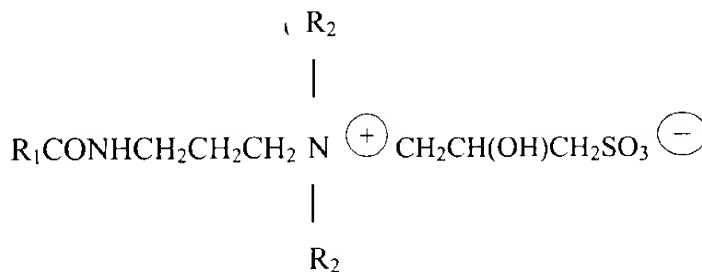
where m, which may be the same or different, is a number from 1 to 50, and n is a number from 10 to 65.

7. The process of claim 4 wherein the nonionic surfactant is a mixture of a polyglycoside and a polyoxalkylene glycol.

8. The process of claim 5 wherein the weight ratio of sultaine to polyglycoside in the surfactant blend is from about 40:60 to 60:40.

9. The process of claim 6 where the weight ratio of sultaine to polyoxyalkylene glycol in the surfactant blend is from about 40:60 to 60:40

10. The process of claim 1, 2, 3, 4, 5, 6, 7, 8, or 9 wherein sultaine is represented by the following chemical structure:



11. The process of claim 10 where the weight ratio of sultaine to nonionic surfactant is from 40:60 to 60:40 and the weight ratio of polyglycoside to polyoxyalkylene glycol in the surfactant blend is from 90:10 to 10:90.

12. The process of claim 11 wherein the amount of pulping woodchips used is from 10 to 40 weight percent based on the weight percent of the white liquor.

1 13. A digester additive for pulping woodchips comprising:

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3 (a) a sultaine; and

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5 (b) a nonionic surfactant selected from the group consisting of

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7 (1) polyglycosides,

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9 (2) polyoxyalkylene glycols, and

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11 (3) mixtures thereof.

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13 14. The composition of claim 13 wherein the weight ratio of sultaine to nonionic
14 surfactant is from about 10:90 to 90:10.

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16 15. The composition of claim 14 wherein the nonionic surfactant is a polyglycoside
17 and the polyglycoside is an alkyl alkoxy polyglycoside having the following
18 structural formula:

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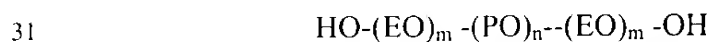
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22 where R_1 is selected from the group consisting of alkyl, alkylphenyl,
23 hydroxyalkyl, hydroxyalkylphenyl, and mixtures thereof in which the alkyl
24 groups contain from about 6 to about 30; and x is from about 1 to about 10; and
25 glycosyl is a monosaccharide group, and the polyglycoside is an alkyl and
26 alkoxy polyglycoside.

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28 16. The composition of claim 15 wherein the nonionic surfactant is a
29 polyoxyalkylene glycol having the following structural formula:

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33 where m is a number from 1 to 50, and n is a number from 10 to 65.

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1 17. The composition of claim 16 wherein the nonionic surfactant is a mixture of a
2 polyglycoside and a polyoxalkylene glycol.

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4 18. The composition of claim 17 wherein the weight ratio of sultaine to
5 polyglycoside in the surfactant blend is from about 40:60 to 60:40.

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7 19. The composition of claim 18 where the weight ratio of sultaine to
8 polyoxyalkylene glycol in the surfactant blend is from about 40:60 to 60:40

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10 20. The composition of claim 19 where the weight ratio of sultaine to nonionic
11 surfactant is from 40:60 to 60:40 and the weight ratio of polyglycoside to
12 polyoxyalkylene glycol in the surfactant blend is from 90:10 to 10:90.

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